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Service-learning in Higher Education Relevant to the Promotion of Physical Activity, Healthful Eating, and Prevention of Obesity

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Review Article

ABSTRACT

Service-learning is a type of experiential teaching and learning strategy combining classroom instruction and meaningful community service and guided activities for reflection. This educational approach has been used frequently in higher education settings, including an array of disciplines such as medicine, theology, public health, physical education, nutrition, psychology, anthropology, and sociology. The purpose of the present review paper was to provide guidance on the use of service-learning within higher education, relevant to the preventive medicine and public health topics of healthful eating, physical activity, and obesity prevention. In service-learning, coursework is structured to address community needs, and to benefit students through the real-world application of knowledge. The benefits for students include positive impacts on social skills, empathy, awareness, understanding, and concern regarding community issues, plus greater confidence and skills to work with diverse populations, increased awareness of community resources, improved motivation, and enhanced knowledge. Educational institutions may also benefit through improved "town and gown" relations, as strong ties, partnerships, and mutually beneficial activities take place. The present literature review describes several service-learning applications such as nutrition education for kids, dietary improvement for seniors, foodservice recipe modification on a college campus, an intergenerational physical activity program for nursing home residents, motor skill development in kindergarteners, organized elementary school recess physical activities, health education, and obesity prevention in children. From this review, service-learning appears to have great potential as a flexible component of academic coursework in the areas of preventive medicine and public health.

Key words: Community, health, learning, teaching

INTRODUCTION

Innovative strategies are needed in the education of health professionals as they prepare to address difficult lifestyle-related

public health problems such as physical inactivity, poor dietary habits, and obesity. Service-learning is an experiential teaching and learning strategy that combines academic instruction with meaningful community service and guided reflection activities.[1] Students spend time serving at a community site, working with people toward meeting an identified community need, and learning through the experience by applying classroom knowledge to a real-world situation. Thus, in service-learning, coursework is structured to address community needs, while also benefitting students through the application of knowledge. This strategic combination is designed simultaneously to provide a rich and engaging educational experience, to promote social and civic responsibility, and to provide real benefit to communities.[2] Although service-learning may be included in the student experience as an extracurricular activity, its close links to academic content makes it easy to justify a fully separate course, or perhaps a substantial portion of an existing course.[3]

From a public health and social justice perspective, Ottenritter[4] has argued that service-learning can effectively allow students to consider and address health disparities within the community. Ottenritter posited that the values, approach, and intended outcomes of service-learning align well with disease prevention and health promotion efforts, and this allows institutions of higher education to contribute to a reduction in observed health disparities within the community.[4] Similarly, Anderson and Colleagues[5] stated that public health, as a discipline, was well suited for the use of service-learning, due to the focus on underserved populations, social justice, and community health.

Service-learning differs from both internships and volunteer work in that it designed to be mutually beneficial, community oriented, and closely articulated with academic topics. Thus, service-learning is compatible with - and complementary to - most educational objectives and standards, both general and discipline-specific.[6] Through this teaching and learning strategy, students are able to explore academic topics actively in real-world settings, to learn to make decisions, to solve problems, and to gain professional experience while helping the community.

Historically, service-learning has been frequently used as a pedagogical approach in undergraduate education,[1] but more recently has expanded to a variety of fields, including: public health,[5] health education,[6] nursing,[7] medical education,[8] theology,[9] physical education,[10] nutrition,[11] psychology,[12] anthropology,[2] and sociology.[9] Thus, there are numerous examples of service learning, and also relevant reviews available that collectively provide information relevant to the implementation and evaluation of service learning across several academic areas of study. The pool of available studies, however, is reduced when looking at literature focused on service learning within a higher education setting. To date, few literature reviews have focused on preventive medicine or the public health topics of healthful eating and physical activity or obesity prevention. Therefore, the purpose of the present review paper was to provide guidance on the use of service-learning within higher education, specifically with regard to preventive medicine and public health topics of healthful eating, physical activity, and obesity prevention.

IMPLEMENTATION OF SERVICE-LEARNING

Benefits of service-learning

Service-learning typically fosters an enhanced awareness of community resources, extending what students learn in the classroom to real-world settings.[13] Students are likely to benefit from service-learning through improved motivation, enhanced knowledge, and better learning outcomes.[14,15] Studies on service-learning have demonstrated positive impacts on social skills, empathy, awareness, understanding, and concern regarding community issues, pro-social reasoning and decision making, plus greater confidence and abilities to work with diverse populations.[12,13,15-17] At community placements, students can observe and interact with people and settings that help to elucidate academic course content beyond what is possible in the classroom.[15] Such experiences may increase students' self-esteem, personal competence, and confidence.[18] Lastly, exposure to experiences in the community may help some students to develop greater self-awareness, or to find a professional niche.[12,15]

Students are not alone in benefitting from service-learning. Faculty members may also enjoy many

of the same benefits as students, including deeper understanding of community issues, empathy, and real-world problem solving. Service-learning may also foster a dynamic learning environment, better student engagement in class, and a stronger faculty-student relationship.[15] For some faculty members, service-learning can enhance research and other scholarly activities.[15]

When carefully constructed by faculty members, service-learning can effectively integrate three major missions of the university: teaching, research, and service,[2,19] although the research component is not seen as essential for most education-related outcomes. Academic institutions and communities may also benefit from community outreach efforts and improved "town and gown" relations, as greater links, partnerships, and mutually beneficial activities take place.[10,20,21] Lastly, inherent within carefully constructed activities, the achievement of benefits for some portion of the community is an explicit goal of service-learning.[2]

Barriers and pitfalls of service-learning

The involvement of student placement sites and dealing with institutions or populations outside of the university realm adds complexity to an academic course, and a number of issues need to be considered when planning a service-learning component. Academic instructors must ensure that there are adequate resources and appropriate high-quality service-learning placements.[15] Indeed, some have cited that the lack of campus or community resources, such as a university service-learning center, can pose challenges for those seeking to begin using this teaching and learning strategy. Depending on the nature of activities and population involved, factors such as financial support, material costs, parking space, child care, and incentives for involvement may be obstacles.[12]

An academic instructor must also carefully consider the design and timeline of the academic course, as it may pose a serious challenge to fit a service-learning component into an already densely packed curriculum.[13,15] The availability or coordination of student time poses one limitation, and the amount of time faculty members spend planning, organizing, serving as liaison, and facilitating student education should not be underestimated.[13,15] Also, it is important to match the skill level of students with the needs of the community placement site so that both student and community needs can be met through the experience.[13] Finally, insufficient communication between students, academic instructor, and other campus or community members has been identified as one pitfall to avoid for successful experiential education activities, so effective lines of communication must be established, coordinated, and well utilized.[11,14]

The components of service-learning

Table 1 identifies seven key elements to consider when planning the implementation of a service-learning component in an academic course, based on the work of Honnet and Poulson.[22] Significant deviations from these elements in the service-learning activities would likely undermine the ability of the students, faculty, institution, and community to benefit fully from the arrangement of teaching and learning activities. Rather than merely completing requisite hours or finding a convenient placement, it is imperative that students provide meaningful service that meets a community-defined need for maximal learning and other benefits to be achieved.[15,22] It is also important that the service is highly related to the topics of the course, and that academic instruction helps to prepare and frame the educational experience for the student.[22] During ongoing service, and also

Table 1: Seven key elements to consider for those planning to implement service-learning activities successfully*

1.	The student should provide meaningful service to the community.
2.	Student service should meet a need or goal of some kind in the community.
3.	Members of the community should help to define the need.
4.	The service provided by the student should stem directly from course objectives.
5.	Service should lead to an academic assignment that requires thoughtful reflection on the service experience, relevant to course objectives.
6.	The reflective assignment should be assessed and evaluated for course credit.
7.	To maintain academic rigour, course credit should be based on demonstrated learning, not demonstrated service.

*Modified from Honnetand Poulson;[22] adherence to these key elements is recommended[22]

after completion, it is crucial that students have the opportunity to reflect critically on the service-learning experience, and to connect their thoughts to academic content from the course.[15,22] Such reflection provides the opportunity to provide feedback on the experience, to think critically, and to explore and clarify values.[15] Studies have shown that the use of written and oral reflection activities is predictive of student learning outcomes.[15] This critical reflection should be submitted to and evaluated by the academic instructor, and course credit should be based on demonstrated learning apparent in the critical reflections of the student.[22]

Table 2 presents examples of academic instructor considerations regarding implementation and organization of an academic course with service-learning, based on the work of Watson and Colleagues.[10] One of the first considerations regarding placement of students is whether the students may self-select a community site, or whether instructors make arrangement on behalf of the students, and are there adequate spots for all students. Either way, the placement site must present opportunities to address an identified community need corresponding with academic course material. It is important to consider student skill levels, as well as the amount of time needed to fulfill needs of the community site and learning activities. Lastly, communication issues should be sorted out in advance, including points of contact and how best to reach students and community partners.[10]

With regard to coursework, academic instructors should consider selecting highly relevant readings and other useful academic materials to prepare students for their placement.[10] Finding the right mix between theoretical and practical information may present difficulty, but course organizers should consider what students will need to feel confident in starting their community work. As students embark on placement activities, allowing them class time to share service-learning and other

Table 2: Organization of an academic course implementing service-learning*

Course components	Examples of instructor considerations regarding implementation
Site placement	Where are students placed, and who makes decisions on placement?
	Does the placement site present an opportunity to address an identified community need that will mesh with academic course material?
	Is the skill level of student matched with expected service to be provided?
	Is the time commitment appropriate and satisfactory for all parties?
	Is there an adequate number of spots for all students?
	What form of service documentation should be required?
	What lines of communication will be needed between students, placement, and course instructor?
Course material	What readings or materials are necessary to prepare students for their placement?
	How much should emphasis be on theory, versus practical application?
	In what ways can student service-learning experiences be shared by students during class time to help bring course material to life?
Reflection activities and evaluation	What is the appropriate frequency and format (writing or oral communication) of opportunities for student reflection activities?
	Have students considered their place as an individual relative to the community, and relative to their future profession?
	Do the reflection activities allow students to examine values, beliefs, and attitudes relative to the community and site?
	Do the reflection activities allow students to make connections between the academic content of the course and their on-site experiences?
	What percentage of the course grade depends on evaluation of reflection activities?
	What system of evaluation will ensure fairness and provide fair assessment of learning?
Class discussion	How can discussion of student service-learning experiences be integrated with course material?
	What discussion techniques can facilitate higher-order learning of course material such as synthesis, analysis, and evaluation?

*Based on suggestions from Watson and Colleagues[10]

life experiences openly may help to bring academic course material to life and serve to provide social support for other students who may have similar experiences or difficulties.[10]

A key to successful learning in a service-learning opportunity comes from student reflection activities. Well structured reflection opportunities allow students to consider their individual place, relative to the community, and relative to their future profession.[10] Academic instructors can determine an appropriate frequency of reflection, which could be in the form of weekly journal writings, monthly progress reports to the class, occasional small group discussions, or simply an end-of-semester summary report.[15] Regardless of format, properly constructed reflection activities should allow students to examine their values, beliefs, and attitudes relative to the community and site, and to make connections between the academic content of the course and their on-site experiences.[10,15]

Academic instructors should consider how best to integrate discussion of student service-learning experiences with course material. In some circumstances, planned and structured small-group discussions may be warranted, whilst in other situations, discussions may arise more spontaneously in reaction to coverage of academic subject matter. Regardless of their origin, discussions should strive to facilitate higher-order learning of course material including synthesis, analysis, and evaluation.[10] Lastly, academic instructors must determine a system of evaluating student reflection to provide fair assessment of students' achieved learning. Again, academic course credit should be based on demonstrated learning, rather than simply documenting a required amount of service.[22]

APPLICATION TO PREVENTIVE MEDICINE AND PUBLIC HEALTH

Service-learning in the healthful eating context

Service-learning has been frequently implemented in nutrition-related courses within the higher education setting.[15] Table 3 includes a brief description of peer-reviewed articles (n=6) that provide useful information on service learning for the healthful eating context. One example is university students working toward improvement of food security amongst community members from an impoverished area in a food stamp enrolment campaign.[9] In another study that described innovative teaching and learning strategies for nutrition, students focused on improving food security through fund-raising activities for hunger relief organizations.[16] Following are further examples of service-learning in nutrition-related courses that focus more specifically on the promotion of healthful eating in community populations.

Table 3: Summary of service learning in the healthful eating, physical activity, and obesity prevention contexts

Studies	Community group	Service learning description
Healthful eating context		
Geiger and Werner, 2004[6]	Mostly African-American or Hispanic children from 11 classes of inner city public schools.	University of Alabama at Birmingham students delivered a curriculum of 11 age-appropriate health lessons, focused on the topics of nutrition and physical activity, using games, music, discussions, and other activities to teach the health-related concepts.
Porter *et al.*, 2008[9]	Low-income neighbourhoods in Philadelphia	Students from 14 universities were trained to screen for eligibility and enrol people for government programs designed to combat hunger and food insecurity.
Poehlitz *et al.*, 2006[11]	Parents and children in paediatric waiting rooms	The Husky Reads program featured teams of two undergraduate students from University of Connecticut, visiting waiting rooms of paediatric clinics to interact with parents and play games, or read aloud to children on nutrition and healthful eating themes.
Goto and Bianco-Simeral, 2009[14]	Campus foodservice staff and student consumers	Undergraduate nutrition majors at California State University at Chico worked with foodservice staff to modify menu items to promote healthful eating.

(*Continued*)

Table 3: Contd...

Studies	Community group	Service learning description
Ross, 2011[16]	Community hunger relief organizations	Unity College students planned and carried out a bread and soup supper fundraiser. This project raised funds for area hunger relief organizations and informed policymakers about hunger and poverty in the community.
Lee *et al.*, 2008[23]	Adults from near by the university	Community nutrition students of Michigan State University worked with either older adults or younger adults to help them set a goal and change dietary behaviours.
Physical activity context		
Butcher and Hall, 1998[18]	At-risk children in an urban elementary school	Team Lincoln, from the University of Utah College of Health, provided a program of organized recess activities for children in grades 1 through 6.
Williams and Kovacs[20]	Older adults at risk of falls	Undergraduate students from University of North Carolina at Greensboro led older adults through home-based balance and mobility training exercises directed toward fall prevention. After setting their own goals, older adults met with their student trainers once per week, and were encouraged to perform additional exercises beyond the supervised training during the eight week program.
Meaney *et al.*, 2009[24]	Kindergarten children from a nearby elementary school	The Motor Skill Development Program provided transportation from elementary school to physical education classes at held at Texas Tech University for kindergarten children, twice per week.
Romack, 2004[25]	Older adults in a nursing home	Undergraduate students from California State University at Northridge designed and implemented the Free-Wheelers program to promote self-mobility in wheelchair-dependent nursing home residents. Free-Wheelers focused on enhancing upper bodyfitness. The program also focused on social interaction, enjoyment, and meaningful participation.
Obesity prevention		
Johnston *et al.*, 2004[2]	West Philadelphia elementary and middle schools, with predominantly non-Hispanic black students	The Urban Nutrition Initiative, based in University of Pennsylvania's Department of Anthropology and Center for Community Partnerships, provided a nutrition and health curriculum in collaboration with regular teachers. The program promoted school gardening, increased access to healthy foods and physical activity, and youth-led community service and advocacy.
Himelein *et al.*, 2010[12]	Overweight or unfit families with a school-aged child, in the nearby community	Advanced undergraduate students at University of North Carolina at Ashville assisted with the Getting Into Fitness Together obesity prevention program. Students were paired with a family, and served as health mentors. Mentors conducted a home visit, made weekly phone calls to insure satisfaction and commitment, and supported and participated with family members at GIFT program meetings held on campus twice per week.
Johnston, 2009[19]	West Philadelphia, predominantly non-Hispanic black youth	The Agatston Urban Nutrition Initiative, a comprehensive program of the University of Pennsylvania Netter Center for Community Partnerships, strove to prevent obesity and promote nutritional health and community well-being. The program promoted school gardening, increased access to healthy foods and physical activity, and youth-led community service and advocacy.
Massey-Stokes and Meaney, 2006[26]	Minority low-income neighbourhoods in a West Texas city	The service learning activities focused on building communication skills, greater understanding, and cultural competence in Texas Tech University students, while strengthening the community's family involvement in health education to prevent obesity.

Geiger and Werner[6] described a service-learning study wherein undergraduate health education majors planned and delivered a curriculum of 11 age-appropriate health lessons to schoolchildren in the community. The health education lessons focused on the topics of nutrition and physical activity, using games, music, discussions, and other activities to teach the health-related concepts. Results of an evaluation showed favorable ratings of satisfaction pertaining to university student interactions with children, and with preparation and knowledge of health content. Additionally, the undergraduate students reported enhanced social and community awareness, and practical application of knowledge and skills.

In a study that used nutrition education paired with literacy promotion in a service-learning course, Poehlitz and Colleagues[11] described positive learning outcomes for the undergraduates from majors such as education, family studies, social sciences, nutrition, and other health professions. The program was called Husky Reads, and featured teams of two students visiting waiting rooms of pediatric clinics to interact with parents and play games or read aloud with children. All of the program materials used in Husky Reads involved nutrition and healthful eating themes. Though formal evaluation of the program was not described, the study reported more than 40 students participating in a total of 850 hours per semester, resulting in the provision of nutrition education and literacy promotion for 2,400 children and their families.

Lee and Colleagues[23] described a service-learning project featuring nutrition and dietetics students in a guided experiential assignment designed to improve dietary habits among elders. In this study, students conducted three interviews with either a community-dwelling older or younger adult, including dietary recall, assessment of needs and lifestyle, self-monitoring, goal setting, and enablers and barriers to dietary change. Results showed improved attitudes toward older adults among the university students. Although community members likely benefitted from the assistance and interaction with students, study results focused primarily on student outcomes such as improved attitudes and self efficacy in working with older adults.

Goto and Bianco-Simeral[14] examined the effects of involving student consumers and foodservice staff in an experimental food research project undertaken by undergraduate nutrition students. In this study, service learners selected a commonly offered campus food product that warranted modification for improved nutritional content. After reviewing the relevant literature, students modified recipes and compared quality and consumer acceptance of the more nutritious version of the food product. These activities resulted in increased motivation and improved perceived learning outcomes among nutrition students, along with greater awareness of healthful options in the greater campus community.

Service-learning in the physical activity context

In the area of physical activity, service-learning has been used in fields such as physical education,[21,24] kinesiology,[25] exercise and sport science,[20] and across multiple health-related disciplines.[18] Table 3 includes a brief description of peer-reviewed articles (n=4) that provide useful information on service learning for the physical activity context.

Butcher and Hall[18] described an undergraduate service-learning project called Team Lincoln that was implemented at an urban elementary school with a large population of "at-risk" students. Team Lincoln was designed to offer constructive and enjoyable physically active games during recess time at school, with each activity aimed at fostering teamwork, cooperation, and building self-esteem. Examples of recess activities implemented by the 50 undergraduate student role models included tag, obstacle courses, jump rope, soccer, basketball, ultimate Frisbee, and parachute games. Results of the study indicated success as the program appeared to improve children's recess-related attitudes and enjoyment.

In a study by Williams and Kovacs,[20] undergraduate students from a required motor development course led older adults through a progression of home-based balance and mobility training exercises directed toward fall prevention. After setting their own goals, older adults met with their student trainers once per week, and were encouraged to perform additional exercises beyond the supervised training during the eight week program. Preliminary data from evaluation of the program suggested improved balance amongst

the older adults. Additionally social benefits were reported by both students and seniors, and students were able to apply course content in a real-world context.

Similar to the above article by Williams and Kovacs,[20] a study by Romack[25] described the partnership between a nursing home and university to promote physical activity in older adults. For their service-learning experience, undergraduate university students from a Motor Development lecture course designed and implemented the Free-Wheelers program to promote self-mobility in wheelchair-dependent nursing home residents. Free-Wheelers focused on enhancing fitness of the upper body, especially muscular strength, muscular endurance, and joint range of motion. The program also focused on social interaction, enjoyment, and meaningful participation. Results indicated that this program as mutually beneficial for all parties, as academic service-learning objectives were achieved and community members clearly benefitted from the physical activity promotion program.

Meaney and Colleagues[24] addressed physical activity promotion at the opposite end of the age spectrum, describing a service-learning program undertaken by 31 undergraduate physical education majors that was designed to foster motor skill development in children. In this study, university students provided kindergarten children with opportunities for individual and group motor skill instruction twice per week, in fundamentals such as throwing, hopping, balancing, jumping, and hand-eye coordination. Despite reporting initial nervousness and anxiety, undergraduate physical education students showed improved pedagogical content knowledge after the eight week motor skill development program.

Service-learning in the obesity prevention context

Service-learning has also been applied to childhood obesity prevention.[12,19,26] Table 3 includes a brief description of peer-reviewed articles (n=4) that provide useful information on service learning for the obesity prevention context. The Agatston Urban Nutrition Initiative took a problem-solving approach to create a comprehensive action-oriented community wellness program, which has been described in two studies.[2,19] This academically based community service program included nutrition and health education components that were delivered by undergraduate students to local youth, school gardening, increased access to healthy foods and physical activity, and youth-led community service and advocacy. Broadly framed, however, the program is described as being based on participation, education, and community partnership and engagement.[19] Evaluation results of the program have indicated positive impacts on children's diets, as well as positive educational outcomes among university students.[2]

Massey-Stokes and Meaney[26] also addressed childhood obesity in a study that addressed research on establishing community need prior to the implementation of a service-learning program. These authors sought to gain qualitative data yielding insight into the perceptions of students, parents, and teachers with regard to healthy lifestyles and obesity prevention. Results of this study showed the complexity of the problem, as poverty interacted with personal and environmental factors to influence current health behaviors. The authors concluded that service-learning programs could play an important role in obesity prevention for children through the development of communication skills, greater understanding, and cultural competence in university students.

Himelein and Colleagues[12] described a family-based obesity prevention program called Getting Into Fitness Together (GIFT). In this program, 33 undergraduates from psychology or health and wellness promotion departments participated by serving as health mentors to one of 21 participating families. Mentors conducted a home visit, made weekly phone calls to insure satisfaction and commitment, and supported and participated with family members at GIFT program meetings held on campus twice per week. In this study, family satisfaction and retention of families was high over both years of GIFT, and 89% reported tangible behavior changes in healthful eating or physical activity. Results also showed benefits to students, in that students appreciated the opportunity to apply knowledge and skills while making a difference in the community.

DISCUSSION

Service-learning appears to have great potential

as a flexible component of academic course work in the areas of preventive medicine and public health. The various service-learning examples described in this review appear promising as teaching and learning strategies, though the strengths and limitations of this body of literature reviewed should be considered. Broadly speaking, the extant literature reviewed in the present study is mostly descriptive in nature, full of evidence at the anecdotal level, and generally not based on rigorous methodology. This is understandable, as many of the studies are aimed at sharing educational insights and ideas, rather than demonstrating efficacy of the teaching and learning strategies. Much of the literature, however, is focused on learning outcomes, which only represents a portion of the service-learning equation. What is not often emphasized and evaluated are the health-related outcomes or impacts of student service with regard to preventive medicine in the community (e.g., McWilliams and Colleagues[8]). From this, the question arises as to whether the community need is actually met through the described service-learning programs. Future studies evaluating the impacts of service learning should consider whether community needs are being met, along with evaluations of whether academic needs are met. Lastly, there is potential bias at work in the reviewed body of literature, stemming from the fact that the evidence comes from service learning conducted by motivated and qualified academic professionals in the North American context, and also that the authors and publishers of this evidence are probably more likely to share success stories rather than failures.

Although numerous examples of successful implementation of service-learning can be found in the areas of healthful eating, physical activity and obesity prevention, little is known about long-term outcomes. Typically, outcomes are bound within the time frame of a semester or year, but little is known about how long the effects of service-learning may last.[12] One might expect that lasting impressions could be made, particularly for the receptive and motivated students, but such longitudinal data are lacking. With regard to community need, data are similarly lacking on sustainability of service-learning agreements and impact on the community over years.

Much of the evidence reviewed in the present paper has focused on the positive impacts of service-learning, but there was little to no mention of unwanted side effects, unintended consequences, or the occurrence of unfortunate events arising during student placements at community sites. Though these issues were not identified in the literature, it is conceivable that undesirable outcomes may occur at least occasionally in service-learning activities. The extent of legal liability for unfortunate events warrants concern on the part of the involved parties,[11] and proactive steps should be taken by academic instructors and organizers of service-learning agreements. In light of these considerations, researchers should investigate the costs and potential costs of service-learning in relation to the benefits of this approach. This could be done in a formal cost-benefit analysis, or less formally through a qualitative study based on focus-group interviews of academic instructors who have previously implemented service-learning, whether successfully or otherwise.

CONCLUSION

Service-learning is an experiential education strategy combining academic instruction with meaningful community service and reflection that has been shown to benefit students, communities, academic instructors, and institutions in many academic areas, including preventive medicine and public health. A wide range of service-learning programs has been described in the literature, implemented with a diverse array of sites and populations across the age spectrum. Thus, it appears that service-learning has great potential as a rather flexible component of academic coursework in the areas of preventive medicine and public health, which may only be limited by the creativity and resources available of academic instructors and their home institutions.

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